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File: USPT

Feb 3, 2004

US-PAT-NO: 6685946

DOCUMENT-IDENTIFIER: US 6685946 B2

**** See image for Certificate of Correction ****

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: 424/209.1; 424/204.1, 424/206.1, 435/91.1, 435/91.33, 435/91.41,
530/300, 536/23.72

CLAIMS:

What is claimed is:

1. An isolated equine influenza nucleic acid molecule selected from the group consisting of: a. an isolated nucleic acid molecule that encodes a protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:69, SEQ ID NO:92, and SEQ ID NO:107; and b. an isolated nucleic acid molecule fully complementary to a nucleic acid molecule of (a); wherein said nucleic acid molecule of (a) or (b) is not an entire equine influenza virus genome.
2. The nucleic acid molecule of claim 1, wherein said nucleic acid molecule comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:91, SEQ ID NO:93, SEQ ID NO:106 and SEQ ID NO:108 and a nucleic acid molecule comprising a nucleic acid sequence which is fully complementary to any of said nucleic acid sequences.
3. A nucleic acid molecule of claim 1, wherein said nucleic acid molecule encodes a protein.
4. A nucleic acid molecule of claim 1, wherein said nucleic acid molecule encodes a protein selected from the group consisting of Pei.sub.cal PB1-C.sub.396, and Pei.sub.cal PB1.sub.757.

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L1: Entry 4 of 8

File: USPT

Jun 17, 2003

US-PAT-NO: 6579528

DOCUMENT-IDENTIFIER: US 6579528 B1

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: June 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: 424/209.1; 424/204.1, 424/205.1, 435/91.1, 435/91.33, 435/91.41,
530/300, 536/23.72

CLAIMS:

What is claimed:

1. An isolated equine influenza nucleic acid molecule selected from the group consisting of (a) an isolated nucleic acid molecule selected from the group consisting of SEQ ID NO:4 and SEQ ID NO:6, and (b) a nucleic acid molecule comprising a nucleic acid sequence which is fully complementary to any of said nucleic acid sequences of (a); wherein said nucleic acid molecule of (a) or (b) is not an entire equine influenza virus genome.
2. The invention according to claim 1, wherein said nucleic acid molecule comprises a cold-adapted equine influenza virus having a nucleic acid sequence selected from the group consisting of SEQ ID NO:4 and SEQ ID NO:6.
3. The invention according to claim 1, wherein said nucleic acid molecule encodes a protein comprising SEQ ID NO:5.
4. A isolated equine influenza nucleic acid molecule, wherein said equine influenza nucleic acid molecule encodes a protein SEQ ID NO:5, wherein said isolated nucleic acid molecule is not an entire equine influenza virus genome.

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☐ 15:

Modified pulmonary surfactant is a potent adjuvant that stimulates the mucosal IgA production in response to the influenza virus antigen.
J Immunol. 2006 Jan 15;176(2):1122-30.
PMID: 16394001 [PubMed - indexed for MEDLINE]

☐ 16: [Soboll G, Nelson KM, Leuthner ES, Clark RJ, Drape R, Macklin MD, Swain WF, Olsen CW, Lunn DP.](#) [Related Articles, Links](#)

Mucosal co-administration of cholera toxin and influenza virus hemagglutinin-DNA in ponies generates a local IgA response.
Vaccine. 2003 Jun 20;21(21-22):3081-92.
PMID: 12798652 [PubMed - indexed for MEDLINE]

☐ 17: [Takase H, Murakami Y, Endo A, Ikeuchi T.](#) [Related Articles, Links](#)

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Vaccine. 1996 Dec;14(17-18):1651-6.
PMID: 9032895 [PubMed - indexed for MEDLINE]

☐ 18: [Asahi Y, Yoshikawa T, Watanabe I, Iwasaki T, Hasegawa H, Sato Y, Shimada S, Nanno M, Matsuoka Y, Ohwaki M, Iwakura Y, Suzuki Y, Aizawa C, Sata T, Kurata T, Tamura S.](#) [Related Articles, Links](#)

Protection against influenza virus infection in polymeric Ig receptor knockout mice immunized intranasally with adjuvant-combined vaccines.
J Immunol. 2002 Mar 15;168(6):2930-8.
PMID: 11884464 [PubMed - indexed for MEDLINE]

☐ 19: [Matsuo K, Yoshikawa T, Asanuma H, Iwasaki T, Hagiwara Y, Chen Z, Kadowaki SE, Tsujimoto H, Kurata T, Tamura SI.](#) [Related Articles, Links](#)

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Vaccine. 2000 Jun 1;18(24):2713-22.
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Active synthesis of hemagglutinin-specific immunoglobulin A by lung cells of mice that were immunized intragastrically with inactivated influenza virus vaccine.
J Virol. 1987 Jul;61(7):2150-4.
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L1: Entry 1 of 8

File: USPT

Nov 30, 2004

US-PAT-NO: 6824784

DOCUMENT-IDENTIFIER: US 6824784 B2

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: November 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: [424/209.1](#); [424/204.1](#), [435/91.1](#), [435/91.33](#), [530/300](#), [536/23.72](#)

CLAIMS:

What is claimed:

1. An isolated equine influenza nucleic acid molecule selected from the group consisting of (a) an isolated nucleic acid molecule selected from the group consisting of (a) SEQ ID NO:10, and SEQ ID NO:12, and (b) a nucleic acid molecule comprising a nucleic acid sequence which is fully complementary to any of said nucleic acid sequences of (a); wherein said nucleic acid molecule of (a) or (b) is not an entire equine influenza virus genome.
2. An isolated equine influenza nucleic acid molecule, wherein said equine influenza nucleic acid molecule encodes a protein comprising an amino acid sequence SEQ ID NO:11, wherein said isolated nucleic acid molecule is not an entire equine influenza virus genome.
3. The invention according to claim 1, wherein said nucleic acid molecule comprises a cold-adapted equine influenza virus having a nucleic acid sequence selected from the group consisting of SEQ ID NO:10, and SEQ ID NO:12.
4. The invention according to claim 1, wherein said nucleic acid molecule comprises a cold-adapted equine influenza virus encoding an HA protein, said HA protein having an amino acid sequence comprising SEQ ID NO:11.

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☐ 1: Lindstrom S, Endo A, Sugita S, Pecoraro M, Hiromoto Y, Kamada M, Takahashi T, Nerome K. Related Articles, Links

Phylogenetic analyses of the matrix and non-structural genes of equine influenza viruses.

Arch Virol. 1998;143(8):1585-98.

PMID: 9739336 [PubMed - indexed for MEDLINE]

☐ 2: Kawaoka Y, Gorman OT, Ito T, Wells K, Donis RO, Castrucci MR, Donatelli I, Webster RG. Related Articles, Links

Influence of host species on the evolution of the nonstructural (NS) gene of influenza A viruses.

Virus Res. 1998 Jun;55(2):143-56.

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☐ 3: Lindstrom SE, Hiromoto Y, Nishimura H, Saito T, Nerome R, Nerome K. Related Articles, Links

Comparative analysis of evolutionary mechanisms of the hemagglutinin and three internal protein genes of influenza B virus: multiple cocirculating lineages and frequent reassortment of the NP, M, and NS genes.

J Virol. 1999 May;73(5):4413-26.

PMID: 10196339 [PubMed - indexed for MEDLINE]

☐ 4: Ito T, Gorman OT, Kawaoka Y, Bean WJ, Webster RG. Related Articles, Links

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J Virol. 1991 Oct;65(10):5491-8.

PMID: 1895397 [PubMed - indexed for MEDLINE]

☐ 5: Endo A, Pecoraro R, Sugita S, Nerome K. Related Articles, Links

Evolutionary pattern of the H 3 haemagglutinin of equine influenza viruses: multiple evolutionary lineages and frozen replication.

Arch Virol. 1992;123(1-2):73-87.

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J Gen Virol. 2000 May;81(Pt 5):1293-303.

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- ☐ 8: [Suarez DL, Garcia M, Latimer J, Senne D, Perdue M.](#) [Related Articles, Links](#)

 Phylogenetic analysis of H7 avian influenza viruses isolated from the live bird markets of the Northeast United States.
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 Phylogenetic analyses of type A influenza genes in natural reservoir species in North America reveals genetic variation.
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 Evolution of influenza A virus PB2 genes: implications for evolution of the ribonucleoprotein complex and origin of human influenza A virus.
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- ☐ 12: [Lindstrom SE, Hiromoto Y, Nerome R, Omoe K, Sugita S, Yamazaki Y, Takahashi T, Nerome K.](#) [Related Articles, Links](#)







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- ☐ 13: [Nakajima K, Nobusawa E, Ogawa T, Nakajima S.](#) [Related Articles, Links](#)

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- ☐ 14: [Basler CF, Reid AH, Dybing JK, Janczewski TA, Fanning TG, Zheng H, Salvatore M, Perdue ML, Swayne DE, Garcia-Sastre A, Palese P, Taubenberger JK.](#) [Related Articles, Links](#)

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- ☐ **15:** [Saito T, Kawaoka Y, Webster RG.](#) [Related Articles](#), [Links](#)
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Virology. 1993 Apr;193(2):868-76.
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 **Diverged evolution of recent equine-2 influenza (H3N8) viruses in the Western Hemisphere.**
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- ☐ **17:** [Suarez DL, Perdue ML.](#) [Related Articles](#), [Links](#)
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- ☐ **18:** [Nakao H, Nakajima K, Nakajima S.](#) [Related Articles](#), [Links](#)
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- ☐ **19:** [Daly JM, Lai AC, Binns MM, Chambers TM, Barrandeguy M, Mumford JA.](#) [Related Articles](#), [Links](#)
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Vet Microbiol. 2005 Apr 25;107(1-2):13-21.
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☐ 1. Document ID: US 6824784 B2

L1: Entry 1 of 8

File: USPT

Nov 30, 2004

US-PAT-NO: 6824784

DOCUMENT-IDENTIFIER: US 6824784 B2

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: November 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: 424/209.1; 424/204.1, 435/91.1, 435/91.33, 530/300, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Chemical	Claims	KWIC	Draw. De
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☐ 2. Document ID: US 6685946 B2

L1: Entry 2 of 8

File: USPT

Feb 3, 2004

US-PAT-NO: 6685946

DOCUMENT-IDENTIFIER: US 6685946 B2

**** See image for Certificate of Correction ****

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: 424/209.1; 424/204.1, 424/206.1, 435/91.1, 435/91.33, 435/91.41,
530/300, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Chemical	Claims	KWIC	Draw. De
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☐ 3. Document ID: US 6649169 B2

L1: Entry 3 of 8

File: USPT

Nov 18, 2003

US-PAT-NO: 6649169

DOCUMENT-IDENTIFIER: US 6649169 B2

**** See image for Certificate of Correction ****

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: November 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: 424/209.1; 424/204.1, 424/206.1, 435/235.1, 435/237, 435/239

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 4. Document ID: US 6579528 B1

L1: Entry 4 of 8

File: USPT

Jun 17, 2003

US-PAT-NO: 6579528

DOCUMENT-IDENTIFIER: US 6579528 B1

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: June 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: 424/209.1; 424/204.1, 424/205.1, 435/91.1, 435/91.33, 435/91.41,
530/300, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 5. Document ID: US 6482414 B1

L1: Entry 5 of 8

File: USPT

Nov 19, 2002

US-PAT-NO: 6482414

DOCUMENT-IDENTIFIER: US 6482414 B1

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: November 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: [424/209.1](#); [424/186.1](#), [424/204.1](#), [435/91.1](#), [435/91.33](#), [530/300](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMCC	Drawings
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☐ 6. Document ID: US 6436408 B1

L1: Entry 6 of 8

File: USPT

Aug 20, 2002

US-PAT-NO: 6436408

DOCUMENT-IDENTIFIER: US 6436408 B1

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: August 20, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: [424/209.1](#); [424/204.1](#), [424/206.1](#), [435/235.1](#), [435/237](#), [435/239](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMCC	Drawings
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☐ 7. Document ID: US 6177082 B1

L1: Entry 7 of 8

File: USPT

Jan 23, 2001

US-PAT-NO: 6177082

DOCUMENT-IDENTIFIER: US 6177082 B1

TITLE: Cold-adapted equine influenza viruses

DATE-ISSUED: January 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		
Youngner; Julius S.	Pittsburgh	PA		

US-CL-CURRENT: [424/209.1](#); [424/204.1](#), [424/206.1](#), [435/235.1](#), [435/237](#), [435/239](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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☐ 8. Document ID: US 5149531 A

L1: Entry 8 of 8

File: USPT

Sep 22, 1992

US-PAT-NO: 5149531

DOCUMENT-IDENTIFIER: US 5149531 A

**** See image for Certificate of Correction ****

TITLE: Method of using cold-adapted live influenza virus vaccine as an antiviral agent against influenza

DATE-ISSUED: September 22, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Youngner; Julius S.	Pittsburgh	PA		
<u>Dowling; Patricia W.</u>	Pittsburgh	PA		

US-CL-CURRENT: 424/93.6; 424/209.1, 424/821

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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L2: Entry 1 of 2

File: DWPI

Nov 11, 2004

DERWENT-ACC-NO: 2002-010769

DERWENT-WEEK: 200475

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TITLE: Treating an animal for respiratory disease, particularly caused by equine influenza virus, comprises administering a composition comprising a virus a cold-adapted equine influenza virus or a reassortant influenza A virus

INVENTOR: DOWLING, P W; YOUNGNER, J S ; YOUNGER, J S

PRIORITY-DATA: 2000US-194325P (April 3, 2000), 2001US-0813920 (March 21, 2001), 2002US-0239972 (December 23, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>US 20040223980 A1</u>	November 11, 2004		000	A61K039/145
<u>WO 200174386 A2</u>	October 11, 2001	E	049	A61K039/12
<u>US 20010051161 A1</u>	December 13, 2001		000	A61K039/145
<u>AU 200149300 A</u>	October 15, 2001		000	
<u>EP 1267920 A2</u>	January 2, 2003	E	000	A61K039/145
<u>JP 2003528925 W</u>	September 30, 2003		062	A61K039/145

INT-CL (IPC): A01 K 13/00; A61 K 39/12; A61 K 39/145; A61 P 11/00; A61 P 31/04; A61 P 31/12; A61 P 31/16; C12 Q 1/70

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstracts	References	Claims	K00C	Draw D
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☐ 2. Document ID: US 6824784 B2, WO 200009702 A1, AU 9954877 A, US 6177082 B1, EP 1105497 A1, US 6436408 B1, JP 2002522078 W, AU 760356 B, US 6579528 B1, US 20030180322 A1, US 20030199074 A1, US 6649169 B2, US 20040022809 A1, US 20040137015 A1, US 20040234553 A1

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File: DWPI

Nov 30, 2004

DERWENT-ACC-NO: 2000-224339

DERWENT-WEEK: 200479

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TITLE: New cold-adapted equine influenza viruses and reassortant viruses used as vaccines for treating influenza infections in animals, particularly horses, have a

phenotype such as temperature sensitivity or dominant interference

INVENTOR: DOWLING, P W; YOUNGNER, J S

PRIORITY-DATA: 1998US-0133921 (August 13, 1998), 2000US-0634159 (August 9, 2000), 2001US-0762861 (August 24, 2001), 2002US-0180633 (June 26, 2002), 2003US-0434811 (May 8, 2003), 2004US-0872014 (June 18, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>US 6824784 B2</u>	November 30, 2004		000	A61K039/145
<u>WO 200009702 A1</u>	February 24, 2000	E	127	C12N015/44
<u>AU 9954877 A</u>	March 6, 2000		000	
<u>US 6177082 B1</u>	January 23, 2001		000	A61K039/145
<u>EP 1105497 A1</u>	June 13, 2001	E	000	C12N015/44
<u>US 6436408 B1</u>	August 20, 2002		000	A61K039/145
<u>JP 2002522078 W</u>	July 23, 2002		141	C12N015/09
<u>AU 760356 B</u>	May 15, 2003		000	C12N015/44
<u>US 6579528 B1</u>	June 17, 2003		000	A61K039/145
<u>US 20030180322 A1</u>	September 25, 2003		000	C12P021/06
<u>US 20030199074 A1</u>	October 23, 2003		000	A61K039/145
<u>US 6649169 B2</u>	November 18, 2003		000	A61K039/145
<u>US 20040022809 A1</u>	February 5, 2004		000	A61K039/145
<u>US 20040137015 A1</u>	July 15, 2004		000	A61K039/145
<u>US 20040234553 A1</u>	November 25, 2004		000	A61K039/145

20040234553 A1 INT-CL (IPC): A61 K 39/12; A61 K 39/145; A61 P 31/16; C07 H 21/04; C07 K 14/11; C07 K 14/115; C12 N 7/00; C12 N 7/02; C12 N 7/04; C12 N 7/08; C12 N 15/09; C12 N 15/44; C12 P 19/34; C12 P 21/06; C12 N 7/04; C12 R 1:92

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File: PGPB

Aug 11, 2005

PGPUB-DOCUMENT-NUMBER: 20050175985

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050175985 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: August 11, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W	Pittsburgh	PA	US
Youngner, Julius S	Pittsburgh	PA	US

US-CL-CURRENT: 435/5; 435/235.1, 530/350, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 2. Document ID: US 20050039739 A1

L3: Entry 2 of 9

File: PGPB

Feb 24, 2005

PGPUB-DOCUMENT-NUMBER: 20050039739

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050039739 A1

TITLE: Equine intranasal delivery system

PUBLICATION-DATE: February 24, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Penner, Steven J.	Broomfield	CO	US
Sebring, Randal W.	Fort Collins	CO	US

US-CL-CURRENT: 128/200.23

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 3. Document ID: US 20040234553 A1

L3: Entry 3 of 9

File: PGPB

Nov 25, 2004

PGPUB-DOCUMENT-NUMBER: 20040234553

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040234553 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: November 25, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W.	Pittsburgh	PA	US
Youngner, Julius S.	Pittsburgh	PA	US

US-CL-CURRENT: 424/206.1; 435/235.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 4. Document ID: US 20040223980 A1

L3: Entry 4 of 9

File: PGPB

Nov 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040223980

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040223980 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: November 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W	Pittsburgh	PA	US
Younger, Julius S	Pittsburgh	PA	US

US-CL-CURRENT: 424/206.1; 435/5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 5. Document ID: US 20040137015 A1

L3: Entry 5 of 9

File: PGPB

Jul 15, 2004

PGPUB-DOCUMENT-NUMBER: 20040137015

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040137015 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: July 15, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W.	Pittsburgh	PA	US
Youngner, Julius S.	Pittsburgh	PA	US

US-CL-CURRENT: 424/209.1; 435/235.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 6. Document ID: US 20040022809 A1

L3: Entry 6 of 9

File: PGPB

Feb 5, 2004

PGPUB-DOCUMENT-NUMBER: 20040022809

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040022809 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: February 5, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W.	Pittsburgh	PA	US
Youngner, Julius S.	Pittsburgh	PA	US

US-CL-CURRENT: 424/206.1; 435/235.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 7. Document ID: US 20030199074 A1

L3: Entry 7 of 9

File: PGPB

Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030199074

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030199074 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W.	Pittsburgh	PA	US
Youngner, Julius S.	Pittsburgh	PA	US

US-CL-CURRENT: 435/235.1; 530/350, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 8. Document ID: US 20030180322 A1

L3: Entry 8 of 9

File: PGPB

Sep 25, 2003

PGPUB-DOCUMENT-NUMBER: 20030180322

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030180322 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: September 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W.	Pittsburgh	PA	US
Youngner, Julius S.	Pittsburgh	PA	US

US-CL-CURRENT: 424/204.1; 424/186.1, 435/69.1, 435/91.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 9. Document ID: US 20010051161 A1

L3: Entry 9 of 9

File: PGPB

Dec 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010051161

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010051161 A1

TITLE: Cold-adapted equine influenza viruses

PUBLICATION-DATE: December 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Dowling, Patricia W.	Pittsburgh	PA	US
Youngner, Julius S.	Pittsburgh	PA	US

US-CL-CURRENT: 424/206.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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Epidermal powder immunization of mice and monkeys with an influenza vaccine.

Vaccine. 2003 Jun 20;21(21-22):2830-6.

PMID: 12798624 [PubMed - indexed for MEDLINE]

- ☐ 2: [Chen D, Burger M, Chu Q, Endres R, Zuleger C, Dean H, Payne LG.](#) Related Articles, Links



Epidermal powder immunization: cellular and molecular mechanisms for enhancing vaccine immunogenicity.

Virus Res. 2004 Jul;103(1-2):147-53.

PMID: 15163503 [PubMed - indexed for MEDLINE]

- ☐ 3: [Chen D, Endres RL, Erickson CA, Maa YF, Payne LG.](#) Related Articles, Links



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J Virol. 2001 Sep;75(17):7956-65.

PMID: 11483740 [PubMed - indexed for MEDLINE]

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Epidermal powder immunization induces both cytotoxic T-lymphocyte and antibody responses to protein antigens of influenza and hepatitis B viruses.

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PMID: 15802970 [PubMed - indexed for MEDLINE]
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PMID: 2848377 [PubMed - indexed for MEDLINE]
- ☐ **10:** Asanuma H, Hirokawa K, Uchiyama M, Suzuki Y, Aizawa C, Kurata T, Sata T, Tamura S. [Related Articles, Links](#)
-  **Immune responses and protection in different strains of aged mice immunized intranasally with an adjuvant-combined influenza vaccine.**
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- ☐ **13:** Muszkat M, Greenbaum E, Ben-Yehuda A, Oster M, Yeu'l E, Heimann S, Levy R, Friedman G, Zakay-Rones Z. [Related Articles, Links](#)
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PMID: 12692224 [PubMed - indexed for MEDLINE]

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Synergistic action of cholera toxin B subunit (and Escherichia coli heat-labile toxin B subunit) and a trace amount of cholera whole toxin as an adjuvant for nasal influenza vaccine. Vaccine. 1994 Apr;12(5):419-26. PMID: 8023550 [PubMed - indexed for MEDLINE]
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PMID: 1634780 [PubMed - indexed for MEDLINE]
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PMID: 11427274 [PubMed - indexed for MEDLINE]
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PMID: 2824609 [PubMed - indexed for MEDLINE]
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PMID: 12559794 [PubMed - indexed for MEDLINE]
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